CLIMATE RESILIENCE

Water resources managers around the world are facing growing uncertainty and risk from more intense and frequent extreme hydrologic events, increasing temperatures, and sea-level rise. Coupled with increasing demands and competing uses, our world requires dynamic solutions to protect, maintain, and manage our water resources sustainably into the future.

The RTI Center for Water Resources provides the essential information you need to understand how climate variability and change could impact your system's reliability. Our state-of-the-art approaches and analysis tools help you to account for environmental uncertainty, assess risks, and analyze vulnerabilities to make informed water resources planning and management decisions.

Our investigations explore impacts to water resources systems and aquatic ecosystems due to (1) changes in specific climate variables, such as temperature and precipitation, and (2) secondary effects like climate-induced wildfires, infrastructure failures, shifting populations, and water use patterns. We develop solutions to help you better prepare for and manage the impacts of climate change in an increasingly unpredictable environment.
FEATURED PROJECT

Fort Collins Water Supply Vulnerability Study

Client: City of Fort Collins, CO  
Country: United States  
Sector: Water Supply  
Related Services: Planning and Allocation, Monitoring and Forecasting

RTI supported the City of Fort Collins' water supply vulnerability study designed to understand the risk of uncertain future climate conditions and other system risks. RTI designed and implemented a novel hydrologic modeling approach that used the probabilities from paleo-reconstructed wet and dry periods to drive hydrologic variability in the analysis.

Key outputs of this modeling included climate-adjusted natural flow time series at selected locations and evaluations of differences in water availability. RTI also developed a GIS-based demand estimation tool that generates demand scenarios tied to future hydrology scenarios, built from variables for the main water use groups in the city.

ADDITIONAL CLIMATE RESILIENCE SERVICES

- Flood and drought risk assessment and mitigation
- Decision support for water resources systems under deep uncertainty
- Ecological impacts of climate change
- Economic analyses for mitigation and adaptation strategies
- Integrated water resources modeling and information systems
- Assessment of the impacts of hydrologic extremes on water supply
- Resiliency and adaptation planning, knowledge transfer, and training
- Comparative land use and climate change impact analyses

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